# SUMMARY OF FINDINGS

The nature of Federal academic S&E support changed dramatically over the past three decades, with a shift in emphasis toward R&D support and away from "other S&E support." Although Federal funds for R&D support increased, in real dollars, threefold since FY 1971, funds for "other S&E support" were lower in FY 2000 than in FY 1971. (See appendix table 7.) Along with this shift in emphasis, and most likely as a consequence of it, fewer academic institutions received Federal S&E funds in FY 2000 than in the early 1970s. (See appendix table 1.) Academic institutions receiving Federal S&E funds today are much more likely to be receiving support for R&D than they were 30 years ago. In FY 2000, about 80 percent of the academic institutions with Federal S&E support received support for R&D activities compared with less than 50 percent in the early 1970s. (See appendix table 2.)

Most of the changes in the number of institutions supported and the character of activities supported occurred in 2-year, master's-granting, and baccalaureate-granting institutions; that is, those not classified by the Carnegie Foundation for the Advancement of Teaching as research, doctorate-granting, or freestanding medical institutions.[4] (See appendix table 1.) All research universities, most doctorate-granting institutions, and about half of medical institutions received Federal support for R&D activities in each of the 30 years between FY 1971 and FY 2000. (See appendix table 3.) The other institutions, many of which stopped receiving Federal S&E support in the 1970s and early 1980s, may have needed to improve their capacity to conduct R&D to compete for and obtain Federal S&E funds.

The most dramatic changes occurred between the early 1970s and early 1980s. During that period, the number of academic institutions receiving Federal S&E support fell by nearly half. (See appendix table 1.) In addition only 45 percent of all recipient institutions had Federal R&D funds in the early 1970s, compared to almost 90 percent by FY 1983. During the remainder of the 1980s, the percentage of Federal support recipients with R&D funds declined to 68 percent in FY 1989, then rose and fluctuated between 70 and 80 percent in the 1990s. (See appendix table 2.) After FY 1983, the number of 2-year, master's-granting, and baccalaureate-granting institutions receiving Federal S&E support began to increase. However, the level never reached that of the early 1970s. (See appendix table 1.)

The sharp decline in the number of institutions receiving Federal S&E support that occurred between the early 1970s and early 1980s was primarily the result of declines in the number supported by the two largest funders, the Department of Health and Human Services (HHS) and NSF. The decline in the number supported by NSF, which provided "other S&E support" to the largest number of institutions during the 1970s, was particularly dramatic, falling about 80 percent during the period. (See appendix table 9.)

Underlying these trends in the number of recipient institutions was a shifting balance in the nature of available Federal S&E funds. The FY 1971–83 period was characterized by a growing emphasis on Federal support of R&D and a decline in support of other S&E activities. This shift in emphasis started with the cancellation in the early 1970s of a number of Federal institutional support programs. These programs provided funds for activities such as facilities renovation and construction and for creation of centers of excellence in science through broadscale program development at different levels within academic institutions. The programs were cancelled because the Office of Management and Budget believed they were inappropriate at a time of perceived excess capacity in the academic sector and slower growth in

[4] The Carnegie Foundation for the Advancement of Teaching has clustered institutions with similar programs and purposes to better describe the diverse set of traditional institutions serving various needs. Although a new Carnegie Classification was released in 2000, this analysis uses the 1994 Carnegie Classification. The approximate number belonging to each Carnegie classification in 1994, abbreviations for the classifications, and definitions of the 1994 Carnegie Classifications can be found in the Sidebar, *1994 Carnegie Classification of Academic Institutions*, in the next section. The number of institutions in some categories differ slightly from those published in *Science and Engineering Indicators 2002* because of differences in institutional reporting in the survey used for this study. The new 2000 categories combine research and doctorate-granting universities and do not take into account the amount of research support different institutions have received. Although a number of institutions may have changed Carnegie groups within the past three decades, this analysis places each institution into a specific Carnegie group according to its classification in 1994 (including changes made by Carnegie shortly after the initial classification).

Federal research funding. The proportion of Federal S&E dollars directed toward R&D activities at universities and colleges increased steadily during this period, from 67 percent to 89 percent. After FY 1983, the R&D share remained fairly stable. This change in emphasis in the early period occurred primarily in HHS, NSF, and the Department of Agriculture (USDA), and somewhat at the Environmental Protection Agency (EPA) rather than in all the Federal agencies providing academic S&E support. (See appendix table 6.)

Although the number of 2-year, 4-year, and master's-level institutions with Federal S&E support fluctuated considerably over the past three decades, the actual share of Federal funds they receive increased only slightly. All of this relative increase occurred after FY 1985, offset by declining shares for the research universities and the larger doctorate-granting (doctorate 1) institutions; smaller doctorate-granting (doctorate 2) institutions had a small share increase and freestanding medical institutions a substantial one. (See appendix table 5.)